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DATE OF REPORT:	October 17, 2016
LOCATION OF TEST:	St. Louis, Missouri
DATE OF TESTING:	October 6, 2016
PROJECT NAME:	Webster ISB Phase 1 Mock-up
PROJECT NUMBER:	16052F
CLIENT:	Webster University

The following were present for all or portions of the set up and testing.

Mr. Craig A. Miller Sr.	Webster University
Mr. Jim Ward	Webster University
Mr. Kelvin Patel	Cannon Design
Mr. Scott Klingsick	KWA
Mr. George Crow	Heitmann and Associates Inc.
Mr. Jason Szachnieski	Paric
Mr. Stephen D. Ray	Paric
Mr. Mike Thaman	Paric
Mr. Mike Sweeten	Paric
Mr. Steve Corio	Mid America Testing Laboratory
Mr. Travis Swisshelm	Mid America Testing Laboratory
Mr. Rick Heitmann	Mid America Testing Laboratory
Mr. Tyler Pierce	Mid America Testing Laboratory

INTRODUCTION

As requested, Mid America Testing Laboratory visited the above referenced project to perform AAMA 501.2 Field Water Infiltration on recently installed fluid applied air and vapor barrier with penetrations located on an onsite mockup.

The curtain wall assembly was isolated from the testing and not subjected to any water spray during testing. Portions of the curtain wall were incomplete at the time of testing but will be

included in the static air and water infiltration testing to be performed during the laboratory's next visit.

A monarch nozzle was utilized for the field water infiltration testing.

TESTING

All testing was conducted in substantial accordance with procedures provided by the project documents, the client and their consultants. The test procedures, pressures and allowables were discussed with the participants prior to starting the testing. Industry standards were followed utilizing the specified AAMA standards as outlined below.

The mockup was divided into three (3) sections. These included the South section, middle section, and the return wall.

TEST #1

The area tested was of the middle section measuring a nominal 79 ½" wide x 116" high with two (2) return walls measuring 18 ¼" deep. The main portion of the section was on the East elevation of the mockup with the two (2) returns on the North and South elevation. The section consisted of a metal stud wall covered with gypsum sheathing on top of a concrete slab. The slab to stud wall was transitioned with GRACE Bituthene membrane. A termination bar was fastened through the stud wall for the membrane. The wall was sealed with fluid applied Carlisle Barritech NP. Z-girts for the panels, not installed, were anchored through the stud wall and sealed at the fastener heads and completely around the z-girt. A punched window was located within the section but not included in the testing.

The testing began at the lowest z-girt, spraying horizontally across the section then advancing up to the next horizontal component.

Testing began at 9:45 a.m. with an exterior temperature of 75 degrees Fahrenheit, partly cloudy skies and light winds.

1. **FIELD WATER INFILTRATION** (AAMA 501.2) utilizing the Monarch Nozzle with water pressure of 35 PSI. Water shall be applied at a nominal rate of one (1) minute per lineal foot progressing from the lowest horizontal framing member, then continuing with the adjacent vertical framing members.

   ALLOWED: No uncontrolled water infiltration to the room side.

RESULTS: No uncontrolled water infiltration to the room side.

The above result constitutes an acceptable performance.

TEST #2

The area tested was of the South section measuring a nominal 95 ½" wide x 109" high. The section was on the East elevation of the mockup. The North side of the section consisted of a metal stud wall covered with gypsum sheathing on top of a concrete slab. This portion was of a masonry wall with the brick yet to be installed. The South side of the section consisted of a concrete stem wall with a curtain wall window above. The slab to wall was transitioned with GRACE Bituthene membrane. A termination bar was fastened through the walls for the membrane. Both walls were sealed with fluid applied Carlisle Barritech NP. Z-girts for the panels, not installed, were anchored into the concrete stem wall and sealed at the fastener heads and completely around the z-girt on the South side of the section. The North side included rigid insulation fastened through the stud wall. The curtain wall above the concrete wall was not included within the testing.

The testing began again at the lowest z-girt spraying horizontally across the section then advancing up to the next horizontal component. The insulation fasteners were then subjected to spray both on the outside of the insulation and then at the top joint of the insulation in order for water to cascade down behind the insulation and onto the fasteners.

Testing began at 10:30 a.m. with an exterior temperature of 78 degrees Fahrenheit, partly cloudy skies and light winds.

1. **FIELD WATER INFILTRATION** (AAMA 501.2) utilizing the Monarch Nozzle with water pressure of 35 PSI. Water shall be applied at a nominal rate of one (1) minute per lineal foot progressing from the lowest horizontal framing member, then continuing with the adjacent vertical framing members.

   ALLOWED: No uncontrolled water infiltration to the room side.

   RESULTS: No uncontrolled water infiltration to the room side.

   The above result constitutes an acceptable performance.

TEST #3

The area tested was of the North section measuring a nominal 105 ¾" wide x 109" high. The main portion of the section was on the North elevation of the mockup with a 27 ¼" return wall on the East elevation. Both elevations were masonry walls, without brick, consisting of metal stud walls covered with gypsum sheathing on top of a concrete slab. The slab to stud wall was transitioned with GRACE Bituthene membrane. A termination bar was fastened through the stud wall for the membrane. The stud wall was sealed with fluid applied Carlisle Barritech NP. An eyebrow window was located in the middle of the section but isolated from the testing. Surrounding the window was rigid insulation for the masonry wall. The insulation was fastened through the stud wall.

The testing began again at the term bar spraying horizontally across the section then advancing up to the next component. The insulation fasteners were then subjected to spray both on the outside of the insulation and then at the top joint of the insulation in order to get water cascading down behind the insulation and onto the fasteners.

Testing began at 11:00 a.m. with an exterior temperature of 80 degrees Fahrenheit, partly cloudy skies and light winds.

1. **FIELD WATER INFILTRATION** (AAMA 501.2) utilizing the Monarch Nozzle with water pressure of 35 PSI. Water shall be applied at a nominal rate of one (1) minute per lineal foot progressing from the lowest horizontal framing member, then continuing with the adjacent vertical framing members.

ALLOWED:	No uncontrolled water infiltration to the room side.
RESULTS:	No uncontrolled water infiltration to the room side.

The above result constitutes an acceptable performance.

SUMMARY

As can be determined by this report, the air and vapor barrier portions of the mockup have met or exceeded the performance requirements for AAMA 501.2 Field Water Infiltration. The windows were not included during this round of testing.

The next portion of the mockup testing will include all finished exterior components. Both masonry and panels will be installed along with the completion of the curtain wall windows.

In addition, the parapet detail will be finished and included within the static test chambers.

Should you have any questions regarding the information contained in this document, please feel free to contact the laboratory.

Respectfully Submitted,

MID AMERICA TESTING LABORATORY

Tyler Pierce
Project Manager

TJGP
16052F-TR1